4.0 ENVIRONMENTAL CONSEQUENCES

This chapter describes the probable consequences (effects) of each analyzed alternative on relevant environmental resources. Resources are discussed in the same sequence as they were discussed in Chapter 3.

4.1 Effects of the Proposed Action

4.1.1 Waste Management

Waste management effects would be minor because waste resulting from the Proposed Action would be disposed of in existing landfills, which have the capacity to accept the waste. Most of the debris generated by the Proposed Action would be recycled for future use in construction projects at LANL.

Flood Retention Structure A large part of the approximately 25,000 yd^3 (19,000 m^3) of reclaimed concrete rubble and 200 yd^3 (153 m^3) of gabion rock resulting from partial demolition of the FRS would be recycled for use in construction projects at LANL. Uncontaminated soil would either be reused onsite for site restoration after demolition was completed or would be staged at the building debris storage yards on Sigma Mesa (TA-60) or another approved material management area for future use at LANL. Uncontaminated sediments and concrete rubble that cannot be recycled would be disposed of at the Los Alamos County landfill or its replacement facility. Uncontaminated scrap metal generated by demolition activities would be recycled.

Final disposition of the approximately 48,400 yd^3 (36,785 m^3) of removed sediments would depend on sampling and characterization results. Sediment accumulated at the FRS is not expected to be contaminated. PRSs located upstream of the FRS in Two-Mile Canyon and Pajarito Canyon have been stabilized. In addition, PRSs that formerly discharged into Pajarito Canyon have been stabilized. These include outfalls, surface runoff, and dispersion from firing sites. Sediments could be stockpiled in borrow pits at TA-16 to be used for planned construction and fire roads at LANL. Sediments could also be disposed of through the LANL waste management program. If analyses indicate that the sediments have to be managed as a waste type such as radioactive, hazardous, or mixed wastes, they would be disposed of as described in the 1999 LANL SWEIS (DOE 1999). Low-level radioactive waste would be disposed of at LANL, TA-54, Area G. Hazardous or mixed waste would be treated and disposed of offsite at appropriate DOE or commercial disposal sites. Wastes disposed of either onsite or offsite would contribute to filling the receiving landfill to their capacity limits.

Low-head Weir and Detention Basin There would be no change in waste management activities associated with implementing this action over that of the No Action Alternative. The structure would remain in place with continued routine inspection and maintenance including sampling of sediments and periodic sediment removal and disposal as required.

Road Reinforcements As with the No Action Alternative, there would be inconsequential waste generation under the Proposed Action at this structure from the repair of the ACMs and shotcrete surfaces. Road reinforcements would remain in place with continued routine inspection and maintenance activities.

Steel Diversion Wall Removal of this structure would have a minimal effect on waste management resources. About 25 yd^3 (19 m^3) of steel panels and beams generated by the demolition would be removed and shipped offsite for recycling.

4.1.2 Air Quality

Air quality would be unchanged as a result of implementing the Proposed Action. During demolition, there would be a short-term, temporary increase in localized particulate emissions (dust). Use of heavy equipment and vehicles would also cause an increase in NO_x emissions for short-term temporary periods. If controlled blasting were to be used during demolition, materials and equipment used to blast the concrete may contain or emit air pollutants or toxic chemicals reportable under the *Emergency Planning and Community Right-to-Know Act* (EPCRA). Control measures would be in place to control dust generated during demolition activities, and site revegetation would occur.

Flood Retention Structure This demolition activity would cause a temporary increase in localized dust and NO_x emissions at the FRS site, along the roadways used to transport the concrete debris, at the 3-ac staging area along Pajarito Road, and at LANL's storage location (currently Sigma Mesa). These short-term air emissions would be reduced through the use of site dust suppression measures. The site would be revegetated to reduce long-term wind-caused erosion.

Low-head Weir and Detention Basin Routine maintenance procedures may produce temporary, localized dust and NO_x emissions, which could be the same under the Proposed Action as for the No Action Alternative. Dust would be generated short term during any silt removal activities; these would be temporary and infrequent in nature.

Road Reinforcements Routine maintenance procedures may produce temporary, localized particulate emissions, which would be the same under the Proposed Action as for the No Action Alternative. Maintenance activities are expected to be periodic and infrequent in nature.

Steel Diversion Wall Removal of this structure would cause a temporary increase in localized particulate and NO_x emissions at the demolition site and along the LANL roadways. The removal activities would be short term in nature.

4.1.3 Floodplains and Wetlands

The Proposed Action could have short-term effects on the floodplains in Pajarito Canyon. BMPs would be placed to prevent or minimize any adverse effects, however. Wetlands in lower Pajarito Canyon would not be adversely affected. A floodplain/wetland assessment is included as an appendix in this EA.

Flood Retention Structure The downstream wetland area east of TA-18 would not likely be adversely affected due to the BMPs that would be employed at the site and the distance to the wetlands. Work conducted in Pajarito Canyon could contribute to an increase in the potential for sediment movement. If large quantities of sediment were moved downstream, there could be some retention of those sediments by the wetlands downstream in Pajarito Canyon. All excess materials, including demolition debris, soils, and dead vegetation, would be removed from the area so that normal flows could resume after the conclusion of the project. The area would be reseeded to stabilize the site.

Low-head Weir and Detention Basin Implementing the Proposed Action would leave this structure in place with routine inspection and maintenance. There would be no adverse effect on the floodplains. Depending on available moisture, the one-quarter acre potential wetland area could continue to develop and become established or it may fail to become established. If removal of sediments were necessary during maintenance of the structure under this alternative,

as would be the case for the No Action Alternative, appropriate permitting and regulatory compliance measures would be undertaken. As the Los Alamos Canyon ecosystem recovers over time, the amount of runoff reaching the detention basin is expected to decrease. Either this decrease in available surface moisture or the disruption to the area from silt removal activities could result in the reduction or elimination of the potentially developing wetland area.

Road Reinforcements Effects to the floodplain would be the same as for the No Action Alternative, namely, no effects would result except from maintenance activities. Maintenance activities could potentially result in a minor temporary increase in localized erosion. BMPs would be used to minimize soil erosion into the floodplains

Steel Diversion Wall Removal of the steel diversion wall would disturb vegetation in the floodplain. BMPs would be used during demolition. Reseeding of the area would occur after site work was completed.

4.1.4 Biological Resources

There could be a minor effect on biological resources, although these effects would be short term and temporary in nature. Timing of site work could be altered to avoid breeding seasons and migration periods, if necessary, to avoid adverse biological effects to sensitive species.

Flood Retention Structure Under the Proposed Action, disturbance of the potential Mexican spotted owl habitat is possible and this may affect, but is not likely to adversely affect, the habitat. Some overstory and understory vegetation would be disturbed along the mesa top and partially down into the canyon. If TA-18 facilities and capabilities remain in their present location, the use of a continuous conveyor belt to transport debris out of Pajarito Canyon would potentially increase the amount of disturbed vegetation and generate noise. At the end of the demolition and removal of concrete debris and sediment, the streambed would be graded and the remaining sides of the FRS would be stabilized. To replace the vegetation loss, the banks would be reseeded and potentially planted with sapling trees. If TA-18 capabilities and facilities are relocated and the road below the FRS used for transportation and staging of the concrete debris, there would be disturbed vegetation. Reseeding would be required once clean up has been completed. Constraints on the timing of activities and noise levels allowed may be required if Mexican spotted owls occupy habitat in the area; these constraints would be necessary to avoid any adverse effects to the AEI use by individual owls. Noise and activities associated with the demolition activities and post-demolition site revegetation activities may temporarily disperse animals that use the area or modify their migration patterns. These would be short-term effects and the animals would be expected to reoccupy the area.

Low-head Weir and Detention Basin The low-head weir and detention basin are not located in any AEI and are not major features of the site ecology. There would be no effect on threatened or endangered species from the Proposed Action, as would be the case for the No Action Alternative, and no effect to other animals in the area would be expected either. Routine siltation removal could periodically disrupt plants growing in the detention basin.

Road Reinforcements The road reinforcements are not located in any AEI. There would be no effect on threatened and endangered species or other animals or plants in the area from the Proposed Action, as would be the case for the No Action Alternative.

Steel Diversion Wall Temporary, short-term effects to animals and plants could result from demolition of the steel diversion wall. Noise and activity constraints during the breeding season

of the Mexican spotted owl would avoid any adverse effects to the nearby AEI if the area were to become occupied by that species. The area would be reseeded after all demolition activities.

4.1.5 Cultural Resources

Prehistoric archaeological sites were identified at the sites before construction of the structures occurred and were avoided during construction. Implementation of the Proposed Action would not affect known cultural resources.

Flood Retention Structure The demolition of part of the FRS could potentially affect prehistoric archaeological sites near the structure; however, these resources would be marked with flagging or temporary fencing during demolition activities so that they could be avoided. No adverse effects would be likely to occur to these cultural resources.

Low-head Weir and Detention Basin The Proposed Action, as would be the case for the No Action Alternative, would not affect the recorded prehistoric archaeological sites that occur near the weir. Cultural resource artifacts, objects, or fragments of objects may wash downstream into the detention basin over time; however, it would not be possible to identify the original location of these objects to place them in context.

Road Reinforcements A single recorded historic cultural site is located near one of the road reinforcement sites. Leaving the road reinforcements in place with routine maintenance activities would not affect the recorded historic cultural site that occurs just downstream of the road reinforcements as it would be flagged or fenced and avoided. Implementing the Proposed Action would result in no different type or level of effects from those of the No Action Alternative.

Steel Diversion Wall Cultural resources are present near the steel diversion wall along the cliff walls above the canyon floor. These resources would be adequately flagged or fenced before demolition activities commenced and avoided so there would be no expected effects. Removal of this structure would have no effect on cultural resources in the area.

4.1.6 Geology

Proper engineering design and controls to ensure slope stability would be employed during demolition activities. No effect on the geology of the structure sites would be expected to occur from implementing the Proposed Action.

Flood Retention Structure Partial removal of the FRS would leave "wings" of RCC attached to the walls of Pajarito Canyon. Continued erosion and enlargement of grooves already formed in the RCC could reduce the overall stability of the "wings" over time; these grooves and cracks could also become enlarged by freeze-thaw cycles and rainfall. Additionally, the wings of the FRS would be susceptible to any seismic vibrations and ground movements resulting from an earthquake (possible proximity to the Guaje Mountain Fault Zone may increase this risk) should one occur in the area. No effects are expected from implementing the Proposed Action on geology due to the use of BMPs and the design of the structure's below-surface portions, which would remain intact.

The construction, maintenance, grading, and other activities related to access roads to Pajarito Canyon are not anticipated to have an effect on local geology. Access road enhancement activities would be performed to engineering specifications that should eliminate or minimize effects to the overall stability of the north side of the canyon. If TA-18 relocates, improvements

and road maintenance of the unimproved existing road in the bottom of Pajarito Canyon, from TA-18 to the FRS, could increase need for additional BMPs to control erosion.

Low-head Weir and Detention Basin The Proposed Action, as for the No Action Alternative, is to leave the low-head weir in place and provide periodic maintenance. Some accumulation of sediments behind the weir is expected; periodic maintenance would include silt removal. No other effects on local geology would be expected.

Road Reinforcements Under the Proposed Action, the road reinforcements would be left in place. Regular inspections and periodic maintenance would be performed to ensure that outlet structures do not become blocked. No effects to local geology would be expected from implementing either the Proposed Action or the No Action Alternative.

Steel Diversion Wall Total removal of the above ground portions of the steel diversion wall would be a part of the Proposed Action. No effects to local geology would be expected.

4.1.7 Water Resources (Ground and Surface)

Minor effects to surface and subsurface water quality would be expected in Pajarito Canyon from implementing the Proposed Action. Controlled demolition and proper removal actions, including BMPs, would be put in place to preserve water quality during actual demolition activities. Long-term site stabilization at each of the subject structures would help protect surface water quality. Site remediation actions would be required if contamination were present to prevent surface water quality downstream and to preserve subsurface water quality conditions.

Flood Retention Structure Demolition of the FRS would be performed in a controlled manner to ensure containment of potentially contaminated sediments so that there would be no adverse effect to water quality. If the contamination levels in Pajarito Canyon were to be below action limits established by regulators, the accumulation of sediments behind the FRS would have no effect, or only a small effect, on either surface or groundwater quality. If the sediments were to be contaminated at levels above which remediation would be required, contamination of surface and shallow groundwater could result. Periodic sampling and proper remediation actions, if needed, would preserve water quality within Pajarito Canyon and points downstream of the FRS. The installation of BMPs during demolition activities would protect surface water quality from siltation; revegetation and stabilization of the sides of the canyon would protect surface-water quality long term. Excavation or demolition debris would not be placed in or near drainages or on the floodplain. Excavated materials would be properly disposed of at an appropriate receiving site. If sediments were to be contaminated, they would be disposed of appropriately (see Section 4.1.1 on Waste Management).

No adverse effects to surface or groundwater quality would be expected from improving the road down the north slope of Pajarito Canyon from Pajarito Road or the road up the canyon floor from TA-18. BMPs would prevent effects to water quality by controlling the streambed and decreasing erosion and sediment load in the streams.

Low-head Weir and Detention Basin If the low-head weir and detention basin were to remain in place under the Proposed Action, water resource effects would be the same as for the No Action Alternative. The weir would provide some containment of sediments washing down Los Alamos Canyon. Elevated constituents present within the sediments could affect water quality in surface waters, shallow groundwater, and, potentially, the regional aquifer. Routine sampling

and periodic removal of sediment would occur based on the levels of constituents in the silt in the detention basin.

Road Reinforcements There would be no measurable effect on water resources or quality by allowing the road reinforcements to remain in place under the Proposed Action as would be the case for the No Action Alternative. Periodic inspection would occur and routine maintenance activities would be conducted with BMPs in place.

Steel Diversion Wall Total removal of the above ground portions of the steel diversion wall would be conducted under the Proposed Action. There would be no placement of excavation or demolition debris in or near drainages or on the floodplain. Excavated materials would be properly recycled or taken to an appropriate receiving site. If sediments at the diversion wall were contaminated, they would be disposed of appropriately (see Section 4.1.1 on Waste Management).

4.1.8 Human Health

The Proposed Action would not be expected to affect the health of demolition and maintenance workers or the public. Routine demolition activities and maintenance activities would be conducted according to site-specific work plans.

Flood Retention Structure The Proposed Action is not expected to result in an adverse effect on the health of demolition and maintenance workers who would be actively involved in potentially hazardous activities such as heavy equipment operations and removal of waste concrete from the FRS. Potentially serious exposures to various hazards or injuries are possible during the breeching of the FRS under the Proposed Action. Adverse effects could range from relatively minor incidents (such as respiratory irritation, cuts, or sprains) to major injuries (such as lung damage or broken bones). To prevent serious injuries, all site construction contractors would be required to adhere to a Construction Safety and Health Plan (Plan) as described in the Proposed Action. Adherence to an approved Plan, use of PPE and engineered controls, and completion of appropriate hazards training would be expected to prevent adverse health effects on construction workers performing work to implement the Proposed Action.

Routine maintenance of flood control structures would be performed along with occasional removal of debris or repair of site features. For maintenance that requires the removal of large amounts of debris or performance of structural repairs, heavy equipment and the application of concrete to perform repairs may be needed. Hazards associated with the operation of heavy equipment and the application of concrete could pose a minimal health risk to maintenance workers.

Low-head Weir and Detention Basin Under the Proposed Action, as for the No Action Alternative, injuries to workers and members of the public would be unlikely from leaving the low-head weir and detention basin in place. No exposures to waste concrete and debris would occur because no demolition activities would take place. Ongoing routine maintenance activities would continue. Potential health risks to workers from maintenance activities, such as repair of gabions, would be minimal.

Road Reinforcements Road reinforcements would stay in place under the Proposed Action. There would be little potential for injuries to workers and members of the public under this alternative, as would be the case for the No Action Alternative. No exposures to waste concrete and debris would occur because no demolition activities would take place. Ongoing routine

maintenance activities would continue. Potential health risks to maintenance workers would be minimal.

Steel Diversion Wall Removal of the steel diversion wall would have similar potential health risk issues as those described above in the FRS section, because heavy equipment would be used. However, as described in the Proposed Action, all site construction contractors would be required to adhere to a Construction Safety and Health Plan, and to use PPE and engineer controls. Therefore, this action is not expected to result in an adverse effect on the health of demolition workers.

4.1.9 Noise

Noise generated by the Proposed Action would not be expected to affect workers or members of the public. Work would be performed according to site-specific work plans and workers would wear hearing protection as required.

Flood Retention Structure No adverse effects on workers, the public, or the environment would be expected from noise levels generated by routine maintenance operations under the Proposed Action. Noise generated by these activities would be very short-term in duration and highly localized in remote and unoccupied areas at LANL. The Proposed Action would result in limited short-term increases in noise levels associated with various demolition activities. Following the completion of these activities, noise levels would return to existing levels.

The breeching of the FRS would require the use of heavy equipment and possibly the use of large conveyor belts for removal of waste concrete and debris. Heavy equipment such as front-end loaders and backhoes would produce intermittent noise levels at around 73 to 94 dBA at 50 ft (15 m) from the work site under normal working conditions (Canter 1996, Magrab 1975). Truck traffic would occur frequently but would generally produce noise levels below that of the heavy equipment. Continuous noise levels generated by sources such as large conveyor belt systems used for debris removal could exceed 80 dBA depending on the design and operating condition of the system. Workers located in proximity to such a system may be required to wear hearing protection. Based upon a number of physical features that can attenuate noise, noise levels should return to background levels within about 200 ft (66 m) of the noise source (Canter 1996). Since sound levels would be expected to dissipate to background levels before reaching publicly accessible areas or undisturbed wildlife habitats, they should not be noticeable to members of the public or adversely disturb local wildlife. Traffic noise from 30 commuting workers would not be expected to cause a noticeable increase in the present traffic noise level on roads at LANL. The vehicles of demolition workers would remain parked during the day and would not contribute to the background noise levels during this time. Noise levels would not be expected to exceed the established OEL during site activities and would return to existing levels after the site work was completed.

Low-head Weir and Detention Basin The low-head weir would remain in place under the Proposed Action as would be the case under the No Action Alternative. Therefore, ambient noise levels would remain unchanged in the vicinity of the low-head weir and detention basin. Ongoing routine maintenance activities would continue; these have the potential for creating low levels of noise that would be temporary and short-term in nature.

Road Reinforcements Road reinforcements would remain in place under the Proposed Action as would be the case for the No Action Alternative. Ambient noise levels would remain

unchanged in the vicinity of the road reinforcements. Ongoing routine maintenance activities would continue; these have the potential for creating short-term increases in noise levels.

Steel Diversion Wall Removal of the above ground portions of the steel diversion wall would have the same noise issues as those described previously in this section. Total removal of the steel panels would result in limited short-term increases in noise levels associated with various demolition activities. Following the completion of these activities, noise levels would return to existing levels.

4.1.10 Traffic and Transportation

Demolition and debris removal activities at the FRS and the steel diversion wall would cause a temporary increase in traffic on Pajarito Road. This would be short term and would have an imperceptible effect on traffic at LANL.

Flood Retention Structure Partial removal of the FRS would have a short-term, temporary effect on traffic on Pajarito Road during the demolition phase when material from the FRS and sediments that have accumulated behind the structure are removed. Approximately 1,250 loads would be required to remove an estimated 25,000 yd^3 (19,000 m^3) of concrete debris out of the canyon along the existing access road to the staging area on Pajarito Road. Approximately 10 loads would be required to remove about 200 yd^3 (153 m^3) of gabion rocks out of Pajarito Canyon. An additional 2,420 loads may be required to remove accumulated sediment out of the canyon. This would result in about an additional 7,360 truck trips on LANL roads over the seven-month anticipated duration period, which would be within the expected carrying capacity of the transportation conditions.

Low-head Weir and Detention Basin Allowing the low-head weir and detention basin to remain in place under the Proposed Action, as for the No Action Alternative, would not affect traffic or transportation in the area. No changes in the traffic rate or patterns would occur at LANL.

Road Reinforcements Allowing the road reinforcements to remain in place would not affect traffic or transportation in the areas of the road reinforcements. No changes in the traffic rate or pattern would occur at LANL

Steel Diversion Wall Total removal of the above ground portions of the steel diversion wall would not likely affect local traffic along roads at TA-18. Approximately two truckloads would be required to move the steel panels offsite for recycling, resulting in an increase of four truck trips on LANL roads. No perceptible changes in traffic rate or patterns would occur at LANL.

4.1.11 Visual Resources

Demolition and debris removal under the Proposed Action would have a temporary effect on visual resources if the staging areas for the concrete removal were to be located near Pajarito Road. The actual demolition of the FRS and the steel diversion wall would take place in access-restricted areas. The low-head weir and the road reinforcements would remain in place, with no change in visual resources.

Flood Retention Structure Partial removal of the FRS would take place in an access-restricted area and would not be visible from the road. A staging area for crushing concrete and loading trucks would be visible to traffic passing on Pajarito Road; this would be temporary.

Low-head Weir and Detention Basin Under the Proposed Action, the low-head weir and detention basin would remain in place, with routine maintenance and sediment removal if necessary. Maintenance activities would be visible to passers-by on SR 4.

Road Reinforcements Under the Proposed Action, the road reinforcements would remain in place. There would be no change in the visual environment.

Steel Diversion Wall Removal of the steel diversion wall would result in a temporary disruption. The demolition would take place in an access-restricted area and would not be visible to the public.

4.2 Effects of the Disassembly of All Structures Alternative

4.2.1 Waste Management

Waste management effects would be minor because waste resulting from this alternative would be disposed of in existing landfills that have the capacity to accept the waste. Most of the debris generated by the Disassembly Alternative would be recycled for future use in construction projects at LANL.

Flood Retention Structure A large part of the approximately 50,000 yd^3 (38,000 m^3) of reclaimed concrete rubble and 300 yd^3 (230 m^3) of gabion rock resulting from demolition of the FRS would be recycled for use in construction projects at LANL. Uncontaminated soil would either be reused onsite for site restoration after demolition was completed or would be staged at the building debris storage yards on Sigma Mesa (TA-60) or another approved material management area for future use at LANL. Uncontaminated sediments and concrete rubble that cannot be recycled would be disposed of at the Los Alamos County landfill or its replacement facility. Uncontaminated scrap metal generated by demolition activities would be recycled.

Final disposition of the approximately 48,400 yd^3 (36,785 m^3) of removed sediments would depend on sampling and characterization results. Sediment accumulated at the FRS is not expected to be contaminated. PRSs located upstream of the FRS in Two-Mile Canyon and Pajarito Canyon have been stabilized. In addition, PRSs that formerly discharged into Pajarito Canyon have been stabilized. These include outfalls, surface runoff, and dispersion from firing sites. Sediments could be stockpiled in borrow pits at TA-16 to be used for planned construction and fire roads at LANL. Sediments could also be disposed of through the LANL waste management program. If analyses indicate that the sediments have to be managed as a waste type such as radioactive, hazardous, or mixed wastes, they would be disposed of as described in the 1999 LANL SWEIS (DOE 1999). Low-level radioactive waste would be disposed of at LANL, TA-54, Area G. Hazardous or mixed waste would be treated and disposed of offsite at appropriate DOE or commercial disposal sites. Wastes disposed of either onsite or offsite would contribute to filling the receiving landfill to their capacity limits.

Low-head Weir and Detention Basin An estimated 1,700 yd^3 (1,300 m^3) of gabion rocks would be removed and stockpiled for further use at LANL. Sediments that have collected would be analyzed for elevated constituents and disposed of appropriately. Approximately 17,000 yd^3 (12,900 m^3) of sediment could be removed. Approximately 11,900 yd^3 (9,044 m^3) of soil and rock excavated and banked along the sides of the canyon during construction of the low-head weir and detention basin would be returned to the site to fill the basin area.

Road Reinforcements Approximately 500 yd^3 (380 m^3) of concrete rubble resulting from total removal of the road reinforcements would be staged at the building debris storage yards on Sigma Mesa (TA-60) or another approved material management area for future use at LANL.

Steel Diversion Wall Removal of this structure would have a minimal effect on waste management resources. Approximately 25 yd^3 (19 m^3) of steel panels and beams generated by the demolition would be recycled.

4.2.2 Air Quality

Air quality would be unchanged as a result of implementing the Disassembly Alternative. During demolition, there would be a temporary increase in localized particulate emissions (dust). Use of heavy equipment and vehicles would also cause an increase in NO_x emissions for short-term temporary periods. Control measures would be in place to suppress dust generated during demolition activities.

Flood Retention Structure This demolition activity would cause a temporary increase in localized particulate and NO_x emissions at the demolition site, along the roadways used to transport the concrete debris, at the 3-ac (1.2-ha) staging area along Pajarito Road, and at LANL's storage location (currently Sigma Mesa). If controlled blasting is used during demolition, materials and equipment used to blast the concrete may contain or emit air pollutants or toxic chemicals reportable under EPCRA. Particulate emissions would be reduced through the use of dust suppression activities.

Low-head Weir and Detention Basin Demolition of this structure would produce temporary, localized particulate and NO_x emissions (dust and vehicle exhaust). Dust would be generated short term during any sediment removal activities. Emissions would be reduced through the use of control measures.

Road Reinforcements Air quality effects would be minor. Removal activities would have the potential for generating small amounts of dust over a few days duration; truck and equipment exhaust would be similar. Emissions would be temporary and localized and would be reduced by dust suppression activities.

Steel Diversion Wall Removal of this structure would cause a temporary increase in localized particulate emissions at the demolition site and along the roadways used to transport the concrete debris. Removal activities would be short term in nature.

4.2.3 Floodplains and Wetlands

The Disassembly Alternative could have short-term effects on the floodplains. BMPs would be in place to prevent or minimize any adverse effects to floodplains. Effects to wetlands could occur and adverse effects to a potentially developing wetland could result. A floodplain/wetland assessment is included as an appendix in this EA.

Flood Retention Structure The downstream wetland area east of TA-18 would not likely be adversely affected due to BMPs that would be employed at the site and the distance to the wetlands. With total removal of the FRS, there would be a proportional increase in erosion potential of the canyon walls since the sides of the FRS structures would be completely removed. Work conducted in Pajarito Canyon could contribute to an increase in potential for sediment movement. If large quantities of sediment move downstream, there could be some retention of those sediments by the wetlands downstream in Pajarito Canyon. All excess materials, including

demolition debris, soils, and dead vegetation, would be removed from the area so that normal flows could resume at the conclusion of the project. It is not likely that potential siltation to the Pajarito Canyon wetlands would reduce or eliminate their functional capabilities.

Low-head Weir and Detention Basin If the sediment in the detention basin and the weir were to be removed, demolition work would be taking place within an area that might be the site of a developing wetland. Removing the sediment that allowed the wetland to develop could destroy the wetland itself if it becomes established over time as discussed for the Proposed Action and No Action Alternatives.

Road Reinforcements Total removal of these structures would cause a slight increase in erosion potential because the roads would be left without any reinforcements; rehabilitation work performed after the Cerro Grande Fire replaced the original reinforcements on these roads and enhanced them. BMPs would be in place to minimize or prevent any adverse short-term effects. Reseeding of the area would also help minimize or prevent long-term adverse effects.

Steel Diversion Wall Removal of the steel diversion wall could disturb vegetation in the floodplain. BMPs would be used during demolition and reseeding of the area.

4.2.4 Biological Resources

There could be a minor effect on biological resources, although these effects would be short term and temporary in nature. Timing of site work could be altered to avoid breeding seasons and migration periods, if necessary, to avoid adverse biological effects to sensitive species.

Flood Retention Structure Under this alternative, to completely remove the FRS, disturbance of Mexican spotted owl habitat is possible and this may affect but is not likely to adversely affect the habitat. There would be noise and activity constraints during the breeding season of the Mexican spotted owl. Vegetation disturbance would be the same as identified for the Proposed Action. At the end of demolition and removal of debris and sediment, the streambed would be graded and the canyon sides would be stabilized. To replace the vegetation loss, the banks would be reseeded and potentially planted with sapling trees.

Low-head Weir and Detention Basin The low-head weir and detention basin are not located in any AEI and are not major features of the site ecology. There would be no effect on threatened and endangered species from any of the alternatives and no effect to other animals or plants in the area. Plants growing within the detention basin may be removed along with the detention basin.

Road Reinforcements The road reinforcements are not located in any AEI. There would be no effect on threatened and endangered species from of this alternative and no effect to other animals or plants in the area.

Steel Diversion Wall Temporary, short-term effects to animals and plants could result from demolition of the steel diversion wall. Noise and activity constraints during the breeding season of the Mexican spotted owl would lessen any adverse effects to the nearby AEI if the area were to become occupied by that species. The area would be reseeded after all demolition activities.

4.2.5 Cultural Resources

Prehistoric archaeological sites were identified at the sites before construction of the structures occurred and avoided. Implementation of the Disassembly Alternative would not affect known cultural resources.

Flood Retention Structure Removal of the entire FRS would have the same potential effects as removal of a part of the FRS. See discussion above for Proposed Action.

Low-head Weir and Detention Basin The Disassembly Alternative would not affect the recorded prehistoric archaeological sites that occur near the weir. It is possible that traditional cultural properties and cultural artifacts moving downstream could be trapped in the silt and would be removed along with the detention structure.

Road Reinforcements There would be no effect on cultural resources with the Disassembly Alternative. The only historic cultural site located near one of the road reinforcements would be flagged and fenced.

Steel Diversion Wall There would be no effect on cultural resources with the Disassembly Alternative. Cultural resources near the steel diversion wall would be adequately flagged and fenced before the initiation of any demolition activities.

4.2.6 Geology

Proper engineering design and controls would be employed to ensure slope stability during demolition activities. No adverse effect on the geology of the structure sites would be expected to occur from implementing the Disassembly Alternative.

Flood Retention Structure Total removal of the FRS would result in exposure of the canyon sides to accelerated and increased sloughing or erosion. Road upgrades necessary for removal of the structure may have some effect on slope stability or erosion and sedimentation rates as discussed above.

Low-head Weir and Detention Basin Total removal of the low-head weir would essentially return this portion of Los Alamos Canyon to its natural state. There would be no effects on local geology.

Road Reinforcements Removal of the road reinforcements would not effect the geology in the vicinity of the individual reinforcements. Soil would be exposed that could, until revegetation occurred, be slightly more susceptible to erosion. BMPs would be installed to reduce adverse erosion effects.

Steel Diversion Wall Total removal of the steel diversion wall would essentially return this portion of Pajarito Canyon to its natural state. No effects to local geology would be expected.

4.2.7 Water Resources (Ground and Surface)

Minor effects to surface and subsurface water quality would be expected from implementing the Disassembly Alternative. Controlled demolition and proper removal actions, including BMPs, would preserve water quality during actual demolition activities. Long-term site stabilization at each of the subject structures would help protect surface water quality. Site remediation actions would be required if contamination were to be present to prevent surface water quality downstream and to preserve subsurface water quality conditions.

Flood Retention Structure The Disassembly Alternative would have the same issues as the Proposed Action described above. BMPs would prevent effects to water quality by controlling the streambed and decreasing erosion and sediment load in the streams.

Low-head Weir and Detention Basin Total removal of the low-head weir would return the streambed to its natural state. The demolition of the weir would be performed in a controlled

manner to ensure containment of possible elevated constituents (in sediments) so that no adverse effect to water quality would likely occur. No placement of excavation or demolition spoils in or near drainages or on the floodplain would occur. Excavated materials would be properly disposed of at an appropriate receiving site. If sediments were contaminated, they would be dealt with as radioactive low level or mixed waste as previously described in Section 4.1.1. BMPs derived from the SWPP Plan would be implemented to prevent erosion and migration of disturbed soil from the site caused by storm water or other water discharges.

Road Reinforcements Activities involved in removal of road reinforcement structures would be similar to those described above for removal of the low-head weir and detention basin. BMPs would control storm water runoff effects during demolition activities to protect surface water quality.

Steel Diversion Wall Total removal of the diversion wall would return the streambed to its natural state. Issues involved in removal of this structure would be the same as those described above for removal of the low-head weir and detention basin.

4.2.8 Human Health

The Disassembly Alternative would not be expected to affect the health of demolition and maintenance workers. Routine demolition activities would be conducted according to site-specific work plans.

Flood Retention Structure The Disassembly Alternative would have the same issues as the Proposed Action described above. Approximately the same number of demolition workers and debris removal vehicles would be required; however, the duration of demolition and site remediation activities would be extended by three months. This alternative would not be expected to result in an adverse effect on the health of demolition workers.

Low-head Weir and Detention Basin This alternative would have the same issues as those described previously in the Proposed Action for the FRS because heavy equipment would be used. A crew of five would be required to work for approximately three weeks to accomplish total removal of the low-head weir and detention basin. This alternative would not be expected to result in an adverse effect on the health of demolition workers.

Road Reinforcements This alternative would have the same issues as those described previously in the Proposed Action for the FRS because heavy equipment would be used. A crew of 10 would be required to work for approximately six weeks to accomplish the removal. This alternative is not expected to result in an adverse effect on the health of demolition workers.

Steel Diversion Wall This alternative would have the same issues as those described previously in the Proposed Action for the FRS because heavy equipment would be used. A crew of eight would be required to work for approximately six weeks to accomplish removal of the steel diversion wall. This alternative would not be expected to result in an adverse effect on the health of demolition workers.

4.2.9 Noise

Noise generated by the Disassembly Alternative would not be expected to affect workers or members of the public. Work would be performed according to site-specific work plans and workers would have hearing protection as required.

Flood Retention Structure The Disassembly Alternative would have the same issues as the Proposed Action for the FRS described in Section 4.1.9 above; however, the duration of demolition and site remediation activities would be extended by about three months. The Disassembly Alternative would result in limited short-term increases in noise levels associated with various demolition activities. Following the completion of these activities, noise levels would return to existing levels. Noise generated by this alternative would not be expected to have an adverse effect on workers.

Low-head Weir and Detention Basin This alternative would have the same issues as those described previously in Section 4.1.9, the Proposed Action for the FRS. A crew of five would be required to work for approximately three weeks to accomplish the removal. The Disassembly Alternative would result in limited short-term increases in noise levels associated with various demolition activities. Following the completion of these activities, noise levels would return to existing levels. Noise generated by this alternative would not be expected to have an adverse effect on workers.

Road Reinforcements This alternative would have the same issues as those described previously in Section 4.1.9, the Proposed Action for the FRS. A crew of 10 would be required to work for approximately six weeks to accomplish the removal. The Disassembly Alternative would result in limited short-term increases in noise levels associated with various demolition activities. Following the completion of these activities, noise levels would return to existing levels. Noise generated by this alternative would not be expected to have an adverse effect on workers.

Steel Diversion Wall Removal of the steel diversion wall would have the same issues as those described previously in this section. A crew of eight would be required to work for approximately six weeks to accomplish the removal. Total removal would result in limited short-term increases in noise levels associated with various demolition activities. Following the completion of these activities, noise levels would return to existing levels.

4.2.10 Traffic and Transportation

Demolition and debris removal activities would cause a temporary increase in traffic on Pajarito Road. This would be short term and temporary and would have an imperceptible effect on traffic at LANL.

Flood Retention Structure Total removal of the FRS could affect traffic on Pajarito Road during the demolition phase when material from both the FRS and the sediments that have accumulated behind the structure would be removed. It is estimated that approximately 2,500 loads would be required to remove about 50,000 yd^3 (38,000 m^3) of concrete debris out of the canyon along the existing access road and along Pajarito Road. Approximately 48,400 yd^3 (36,785 m^3) of removed sediments could require an additional 2,420 loads to remove this material. Approximately 10 loads would be required to remove about 200 yd^3 (153 m^3) of gabion rocks from the canyon bottom. This would result in about an additional 9,860 truck trips on LANL roads over the ten-month duration period, which would be within the expected carrying capacity of the transportation corridors.

Low-head Weir and Detention Basin Total removal of the weir could have a minor effect on adjacent roads during the demolition phase when materials or sediments would be transported elsewhere. Approximately 1,700 yd^3 (1,300 m^3) of gabion rocks and 17,000 yd^3 (12,900 m^3) of sediment would be removed, resulting in 935 truckloads and 1,870 trips on LANL roads.

Road Reinforcements Removal of road reinforcements would have a minor temporary effect on traffic during demolition activities. Approximately 500 yd^3 (380 m^3) would be removed resulting in 25 truckloads and 50 trips on LANL roads.

Steel Diversion Wall Total removal of the steel diversion wall would not likely affect local roads at TA-18. Approximately two truckloads would be required to move the steel panels and beams offsite for recycling, resulting in an increase of four truck trips on LANL roads.

4.2.11 Visual Resources

Disassembly of the subject structures would cause disruption lasting for several days to as long as several months for the FRS. Both the FRS and the steel diversion wall are located in access-restricted areas and demolition of these structures would not be visible to the public. The low-head weir and detention basin and the road reinforcements are visible to passers-by, and their removal would have a temporary effect on visual resources. None of these would disrupt any vistas.

Flood Retention Structure Total disassembly of the FRS would take place in an access-restricted area and would not be visible from the road. A staging area for crushing concrete and loading trucks would be visible to traffic passing on Pajarito Road; this would be temporary.

Low-head Weir and Detention Basin Disassembly of the low-head weir would be visible from SR 4. This would be a temporary disruption in the visual environment to traffic passing on this road.

Road Reinforcements Removal of the road reinforcements would be visible to passers-by. This would have a temporary effect on the visual environment.

Steel Diversion Wall Removal of the steel diversion wall would result in a temporary disruption. The demolition would take place in an access-restricted area and would not be visible to the public.

4.3 Effects of the No Action Alternative

4.3.1 Waste Management

A small amount of debris from routine maintenance procedures would require appropriate disposal. Waste management effects from the No Action Alternative would be minor because this waste would be disposed of in existing landfills that have the capacity to accept the waste.

Flood Retention Structure There would be minimal waste management effects associated with implementing the No Action Alternative. On the yearly maintenance plan, debris such as brush, sticks, and branches, would continue to be removed and disposed of in accordance with applicable laws, regulations, and DOE Orders. Contaminated sediment would be removed and disposed of appropriately. Sediment accumulated at the FRS is not expected to be contaminated. PRSs located upstream of the FRS in Two-Mile Canyon and Pajarito Canyon have been stabilized. In addition, PRSs that formerly discharged into Pajarito Canyon have been stabilized. These include outfalls, surface runoff, and dispersion from firing sites.

Low-head Weir and Detention Basin There would be minimal waste management associated with implementing the No Action Alternative. Routine inspection and maintenance would continue. Contaminated sediment would be removed and disposed of appropriately.

Road Reinforcements There would be minimal waste management associated with implementing the No Action Alternative. Routine inspection and maintenance would continue.

Steel Diversion Wall There would be minimal waste management associated with implementing the No Action Alternative. Routine inspection and maintenance would continue.

4.3.2 Air Quality

Air quality would be unchanged from ongoing conditions as a result of the No Action Alternative. Routine maintenance procedures may produce temporary, localized particulate emissions. Control measures would be put in place to minimize emissions during maintenance activities.

Flood Retention Structure Routine maintenance procedures may produce temporary, localized particulate emissions. There would be no change from ambient air quality effects associated with this alternative.

Low-head Weir and Detention Basin Routine maintenance procedures may produce temporary, localized particulate emissions. There would be no change from current air quality conditions.

Road Reinforcements Routine maintenance procedures may produce temporary, localized particulate emissions. There would be no change from current air quality conditions.

Steel Diversion Wall Routine maintenance procedures may produce temporary, localized particulate emissions. There would be no change from current air quality conditions.

4.3.3 Floodplains and Wetlands

The No Action Alternative would have minimal effects on the floodplain. Routine maintenance activities would not be expected to have any adverse effects on floodplains but could adversely affect a potential wetland area in Los Alamos Canyon. A floodplain/wetland assessment is included as an appendix in this EA.

Flood Retention Structure The No Action Alternative activities for maintenance and repair of the FRS would reduce the potential for crumbling of the structure and subsequent long-term release of construction materials that could affect the floodplain and wetlands downstream in TA-18. Routine maintenance is expected to remove vegetation growth in the sediment upstream of the structure. No adverse effect or change to the wetland and floodplain functions and values within Pajarito Canyon would likely occur from the No Action Alternative.

Low-head Weir and Detention Basin The No Action Alternative would have the same effects as the Proposed Action with regard to this structure. Leaving this structure in place and providing routine maintenance could allow the wetland to continue to either develop or it could decline and disappear. The No Action Alternative could have an adverse effect on the potential wetland area if sediment were removed periodically on an "as needed" basis should the small wetland area survive. No change to the floodplain would be expected from the No Action Alternative.

Road Reinforcements The No Action Alternative would result in leaving these structures in place. With maintenance, these structures would continue to provide reinforcement along the road. Maintenance would not likely have adverse effects to the floodplain or wetlands below the structures.

Steel Diversion Wall Leaving this structure in place would not affect the floodplains or wetlands. Routine maintenance would have no adverse effect on either floodplains or wetlands.

4.3.4 Biological Resources

Under the No Action Alternative, there would be no effect on threatened or endangered species or their potential critical habitat in the Los Alamos area. Other plants and animals would not be adversely affected long term, except for small-scale removal of vegetation associated with maintenance activities.

Flood Retention Structure Under the No Action Alternative, with the FRS staying in place, there would be no effect on the potential Mexican spotted owl habitat. Threatened or endangered species would therefore not be affected. Small-scale removal of vegetation within the sediment may occur periodically.

Low-head Weir and Detention Basin The low-head weir and detention basin are not located in any AEI. There would be no effect on threatened or endangered species from the No Action Alternative. No effect to animals in the vicinity of the structure would be likely but routine sediment removal on an "as needed" basis could remove small amounts of vegetation.

Road Reinforcements The road reinforcements are not located in any AEI. There would be no effect on threatened or endangered species or other animals and vegetation from the No Action Alternative.

Steel Diversion Wall Under the No Action Alternative, the steel diversion wall would remain in place. There would be no effect on the potential Mexican spotted owl habitat in the area or to other plants and animals in the vicinity of the structure.

4.3.5 Cultural Resources

There would be no effect on cultural resources with the No Action Alternative. Routine maintenance activities would not be expected to affect archaeological sites.

Flood Retention Structure There would be no effect on cultural resources with the No Action Alternative. Routine maintenance activities would not be expected to affect archaeological sites.

Low-head Weir and Detention Basin There would be no effect on cultural resources with the No Action Alternative. Routine maintenance activities would not be expected to affect archaeological sites.

Road Reinforcements There would be no effect on cultural resources with the No Action Alternative. Routine maintenance activities would not be expected to affect archaeological sites.

Steel Diversion Wall There would be no effect on cultural resources with the No Action Alternative. Routine maintenance activities would not be expected to affect archaeological sites.

4.3.6 Geology

Inspections would take into consideration slope stability, erosion, excessive rainfall, flooding events, and seismic events. Routine maintenance would include stabilizing slopes and reducing erosion, which could threaten the stability of the various structures. There would be no adverse effects to the geology of the subject structure areas as a result of the No Action Alternative

Flood Retention Structure Under the No Action Alternative, if the FRS were maintained and inspected on a regular basis, it should continue to retain floodwaters and release them slowly as

designed for the life of the structure. However, slope stability would still be subject to natural processes such as erosion, landslides, rockfalls, rainfalls, freezing and thawing, and seismic events. Erosion deemed to be a threat to the stability of the FRS would need to be dealt with in an appropriate manner and timeframe. No adverse effect to the geology in the vicinity of the FRS would be likely as a result of implementing the No Action Alternative.

Low-head Weir and Detention Basin The No Action Alternative is the same as the Proposed Action for this structure. Some accumulation of sediments behind the weir would be expected; periodic maintenance would include sampling and silt removal as appropriate. No adverse effect to the geology of the weir site would be expected from implementing the No Action Alternative.

Road Reinforcements The No Action Alternative would not be expected to result in adverse effects to the geology of the reinforcement areas. Regular inspections and periodic maintenance would be performed to ensure that outlet structures do not become blocked.

Steel Diversion Wall The No Action Alternative would not be expected to result in adverse effects to the geology in the vicinity of the steel diversion wall. Periodic inspections and routine maintenance would not be expected to have an adverse effect on local geology.

4.3.7 Water Resources (Ground and Surface)

If accumulated sediments were contaminated, they could adversely affect surface water and shallow groundwater quality. Long-term site stabilization at each of the subject structures would help to protect surface and groundwater quality, as would routine maintenance and removal of sediment at the subject sites. There would be no adverse effect to water quality as a result of the No Action Alternative.

Flood Retention Structure With the No Action Alternative, sediment would continue to accumulate behind the FRS (as designed). As such, studies would be conducted to determine if the sediments are contaminated as this could have a detrimental effect on water quality of surface water and shallow groundwater. Proper remediation actions would be conducted to preserve water quality within Pajarito Canyon and points downstream of the FRS. BMPs would also be in place during maintenance activities to protect surface water quality from erosion effects. No adverse effect to water quality would be expected as a result of implementing the No Action Alternative.

Low-head Weir and Detention Basin The No Action Alternative is the same as the Proposed Action. The low-head weir and detention basin would provide some containment of sediments washing down Los Alamos Canyon. Routine sampling and periodic removal of sediments would occur based on the levels of constituents in the silt in the detention basin. No adverse effect would be expected to water quality as a result of implementing the No Action Alternative

Road Reinforcements The No Action Alternative is the same as the Proposed Action. There would be no adverse effect on water resources or quality by allowing the road reinforcements to remain in place.

Steel Diversion Wall Under the No Action Alternative, the steel diversion wall would remain in place. No adverse effect to water quality would be expected as a result of implementing this alternative.

4.3.8 Human Health

Potential health risks to maintenance workers would be minimal. Routine maintenance activities would not be expected to affect workers if the No Action Alternative were implemented.

Flood Retention Structure Under the No Action Alternative, there would be no potential for injuries to demolition workers and members of the public from the breeching of the FRS. No exposures to waste concrete and debris would occur because no demolition activities would take place. However, routine maintenance of the existing FRS would continue. Potential health risks to maintenance workers would be minimal and adverse health effects would be unlikely to occur under the No Action Alternative.

Low-head Weir and Detention Basin Under the No Action Alternative, there would be no potential for injuries to demolition workers and members of the public. No exposures to waste concrete and debris would occur because no demolition activities would take place. Ongoing routine maintenance activities would continue. Potential health risks to maintenance workers would be minimal and adverse health effects would be unlikely to occur under the No Action Alternative.

Road Reinforcements Under the No Action Alternative, there would be no potential for injuries to demolition workers and members of the public. There would be no exposures to waste concrete and debris because no demolition activities would take place. Ongoing routine maintenance activities would continue. Potential health risks to maintenance workers would be minimal and adverse health effects would be unlikely to occur under the No Action Alternative.

Steel Diversion Wall Under the No Action Alternative, the steel diversion wall would remain in place and be maintained. Potential health risks to maintenance workers would be minimal. No exposures to waste concrete and debris would occur because no demolition activities would take place. No adverse health effects would be likely to occur under the No Action Alternative

4.3.9 Noise

Ambient noise levels would remain unchanged in the vicinities of the flood control structures. Environmental noise levels in and around the flood control and erosion reduction structures would be expected to remain below 80 dBA on average.

Flood Retention Structure Under the No Action Alternative, ambient noise levels would remain unchanged in the vicinity of the FRS. Potential noise from demolition activities associated with the Proposed Action would not occur, but ongoing routine maintenance activities would continue. Environmental noise levels in and around the FRS and facilities or operations at LANL would be expected to remain below 80 dBA on average with no resulting adverse effects.

Low-head Weir and Detention Basin Under the No Action Alternative, ambient noise levels would remain unchanged in the vicinity of the low-head weir and detention basin. Ongoing routine maintenance activities would continue. Environmental noise levels in and around the low-head weir and detention basin and facilities or operations at LANL would be expected to remain below 80 dBA on average with no resulting adverse effects.

Road Reinforcements Under the No Action Alternative, ambient noise levels would remain unchanged in the vicinity of the road reinforcements. Ongoing routine maintenance activities would continue. Environmental noise levels in and around the road reinforcements and facilities

or operations at LANL would be expected to remain below 80 dBA on average with no resulting adverse effects.

Steel Diversion Wall Under the No Action Alternative, ambient noise levels would remain unchanged in the vicinity of the steel diversion wall. Potential noise from demolition activities associated with the Proposed Action would not occur, but ongoing routine maintenance activities would continue. Environmental noise levels in and around the road reinforcements and facilities or operations at LANL would be expected to remain below 80 dBA on average with no resulting adverse effects.

4.3.10 Traffic and Transportation

The No Action Alternative would not affect traffic and transportation. Routine maintenance would not be expected to affect roads in the vicinity of the flood control and erosion reduction structures.

Flood Retention Structure The No Action Alternative would leave the FRS in place and would not affect Pajarito Road traffic. No changes in traffic patterns or rates would occur.

Low-head Weir and Detention Basin The No Action Alternative is the same as the Proposed Action. No changes in the traffic rate or pattern would occur at LANL.

Road Reinforcements The No Action Alternative is the same as the Proposed Action. No changes in the traffic rate or pattern would occur at LANL.

Steel Diversion Wall The No Action Alternative would leave the steel diversion wall in place and would not affect Pajarito Road traffic. No changes in the traffic rate or pattern would occur at LANL.

4.3.11 Visual Resources

The No Action Alternative would not affect visual resources. Routine maintenance would only temporarily affect the area near the structures and would not affect vistas near the subject structures.

Flood Retention Structure Under the No Action Alternative, the FRS would remain in place with routine maintenance. There would be no change to the visual environment.

Low-head Weir and Detention Basin Under the No action Alternative, the low-head weir and detention basin would remain in place, with routine maintenance and sediment removal if necessary. Maintenance activities would be visible to passers-by on SR 4.

Road Reinforcements Under the No Action Alternative, the road reinforcements would remain in place. There would be no change in the visual environment.

Steel Diversion Wall Under the No Action Alternative, the steel diversion wall would remain in place. There would be no change in the visual environment. Removal of the steel diversion wall would result in a temporary disruption. The demolition would take place in an access-restricted area and would not be visible to the public.